

## Information sheet

# Ferroamp V2X

### Which cars can be charged with Ferroamp V2X?

The Ferroamp V2X can charge all cars with a CCS connector for fast charging. Cars with 800 V architecture can also be charged.

### Which cars can be discharged with Ferroamp V2X?

No special adaptation of an electric car is required for it to be discharged with the Ferroamp V2X. However, it is required that the car's software does not prevent discharge. In Ferroamp's own tests, some car models interrupt or limit the discharge after a short time. As long as the car manufacturer has not implemented the standard protocol ISO15118-20, there is a risk that they will modify their software. Therefore, it cannot be guaranteed that discharging a car model that works today will also work in the future. In the same way, a car model that does not currently enable discharge can open up for it in the future through a software update.

#### Discharged during test

BMW i7

Hyundai Kona

Kia Niro

Kia EV6

Polestar 2

Polestar 4

Renault Kangoo

Tesla Model S

Tesla Model 3

Tesla Model X

Tesla Model Y

Zeekr 001

#### Prevented discharge during test

Audi e-tron

Skoda Enyaq iV80

VW ID.3

If you have a car model that we have not yet tested, you are welcome to come to Ferroamp's head office in Sundbyberg for testing before placing your order. Get in touch by emailing: [info@dcsquare.se](mailto:info@dcsquare.se).

### Is the car's warranty affected if I discharge the battery?

Most car manufacturers have not commented on this. Ferroamp or dc<sup>2</sup> assumes no responsibility for any impact on the car's warranty when using the discharge function.

### How fast can you charge or discharge?

When the charger is connected to a Ferroamp system, the maximum charging power is the sum of the available power from the grid, any solar power production and the power from any stationary battery. The maximum power of the charger is 20 kW and a current of up to 50 A.

### How can discharge (V2X) be used?

Discharge can currently be used to, for example, move energy from the car to a home battery, to cut power peaks or to increase self-consumption of solar energy. This is configured using settings via the charger's display. Discharge can also be controlled via the charger's API. The software for controlling V2X functionality will gradually be developed in the future, after which we will see how different car manufacturers allow the use of the cars' batteries.

To control discharge via OCPP from the charging operator/aggregator, the car must have implemented the standard protocol ISO15118-20.

### Can the charger be controlled from Ferroamp's app or web portal EnergyCloud?

No. At present, the charger is not visible in EnergyCloud or in Ferroamp's app, nor can it be controlled from there. Monitoring of charging can be done via the charger's display, the car's app or the app from any charging operator via OCPP. Control is configured via the charger's display.

### Can I use the charger for support services?

The charger's response time is sufficient to participate in the market for FCR-D, for example, but it requires integration to an aggregator for control. No such integration exists today.

### How does it work with software updates?

Due to developments in car manufacturers and in communication standards, we anticipate that there will be a great need for software updates in the first few years. For the first two years, software updates will be included in the price.

### Do I need to have an EnergyHub to use the charger?

Yes. Ferroamp V2X will only work if connected to an EnergyHub.

### Where can the charger be mounted?

The charger has an IP43 protection rating and can be mounted on a wall outdoors or indoors with the included wall mount. The charger is fan-cooled, which is why we do not recommend installation directly adjacent to living rooms.

### How is the charger connected?

The charger is connected with cable 3G6 to the DC distribution in the Ferroamp system. Fuse max 32A. An Ethernet cable needs to be connected to the same local network as the EnergyHub.

### Who manufactures the charger?

The charger is manufactured in Sweden by Ferroamp's partner dc<sup>2</sup> AB.

### Where can I turn for support?

Support on the charger is provided by dc<sup>2</sup> AB: [info@dcsquare.se](mailto:info@dcsquare.se)